

# Sinusoidal Word Problems

p. 350-353

q 6,7,14,

p. 357 & 358

q 4, 6,8 & 9

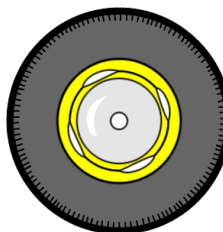
p. 375

q 15

Nov 30-8:11 AM

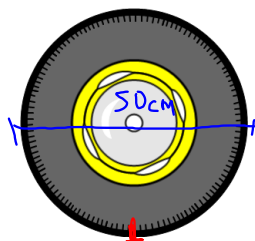
14. The diameter of a car's tire is 50 cm. While the car is being driven, the tire picks up a nail.
- How far does the tire travel before the nail returns to the ground for the first time?
  - Model the height of the nail above the ground in terms of the distance the car has travelled since the tire picked up the nail.
  - How high above the ground will the nail be after the car has travelled 235 cm?
  - The nail reaches a height of 10 cm above the ground for the third time. How far has the car travelled?

$$C = \pi d$$



Nov 22-8:22 AM

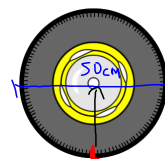
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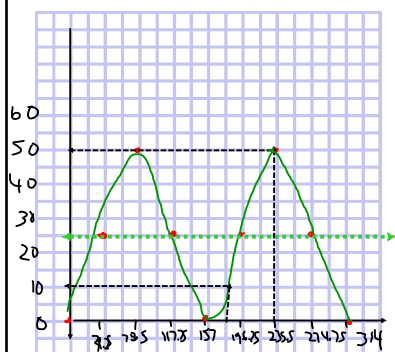
$$C = \pi d$$

$$= 3.14 (50)$$

$$= 157$$

0	0	0	0
90	25	39.25	25
180	25	78.5	50
270	25	117.75	25
360	0	157	0

Nov 22-8:22 AM



$$176.625 \quad d = 25 \quad a = 25$$

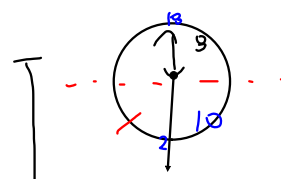
$$f(x) = 25 \sin(x - 39.25) + 25$$

Nov 22-8:39 AM

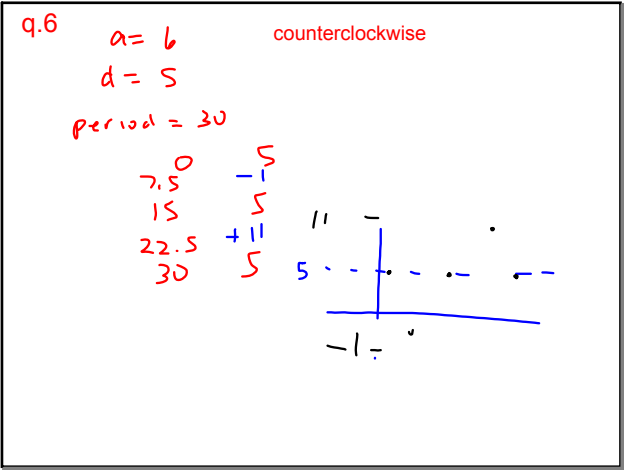
p375 q15

$$h(t) = 9 \sin(t - 45) + 10$$

Ferris Wheel



Nov 13-10:18 AM



Nov 13-10:44 AM